

Anatomical and visual outcomes of surgery for primary rhegmatogenous retinal detachment in pediatric age group

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I. Introduction:

Rhegmatogenous retinal detachment (RRD) is separation of neurosensory retina from retinal pigment epithelium with accumulation of subretinal fluid within the potential space in between. RRD is caused by a full thickness break in the neurosensory retina which initiates separation of the neurosensory retina from the underlying retinal pigment epithelium. Vitreous synsresis needs to be there foe seepage of SRF and detachment. Pediatric RRD has been reported in various parts of the world to account for 3% to 12.6% of all patients with this clinical entity.¹⁻⁴

Majority of RRD cases are caused by more than one retinal break, which needs to be kept in mind for appropriate surgical management. Myopia, peripheral retinal degenerations, PVD, ocular trauma, previous cataract surgery are important predisposing factors. Patients may have RRD or break or lattice in the fellow eye representing an important risk of blateral visual loss.

II. Aims And Objectives:

To evaluate Anatomical and Visual outcomes of surgery for primary rhegmatogenous retinal detachment in pediatric age group patients. Results are to be evaluated in terms of: reattachment rate and visual outcome.

III. Materials And Methods:

This was a prospective, descriptive type of observational, pre-post operative hospital based case series study done at Upgraded Department of Ophthalmology, SMS Medical College, Jaipur. 308 eyes of patients attending SMS Eye OPD diagnosed with uncomplicated Primary RRD were recruited from January 2014 to September 2017. Out of them 43 patients fulfilled the criteria of pediatric age group.

INCLUSION CRITERIA: Pediatric patients with Primary RRD with follow up of post operative 3 months

EXCLUSION CRITERIA: RD due to perforating injury, RD with PVR grade C-1 or higher, exudative and tractional RD.

IV. Treatment Modalities Used In The Study:

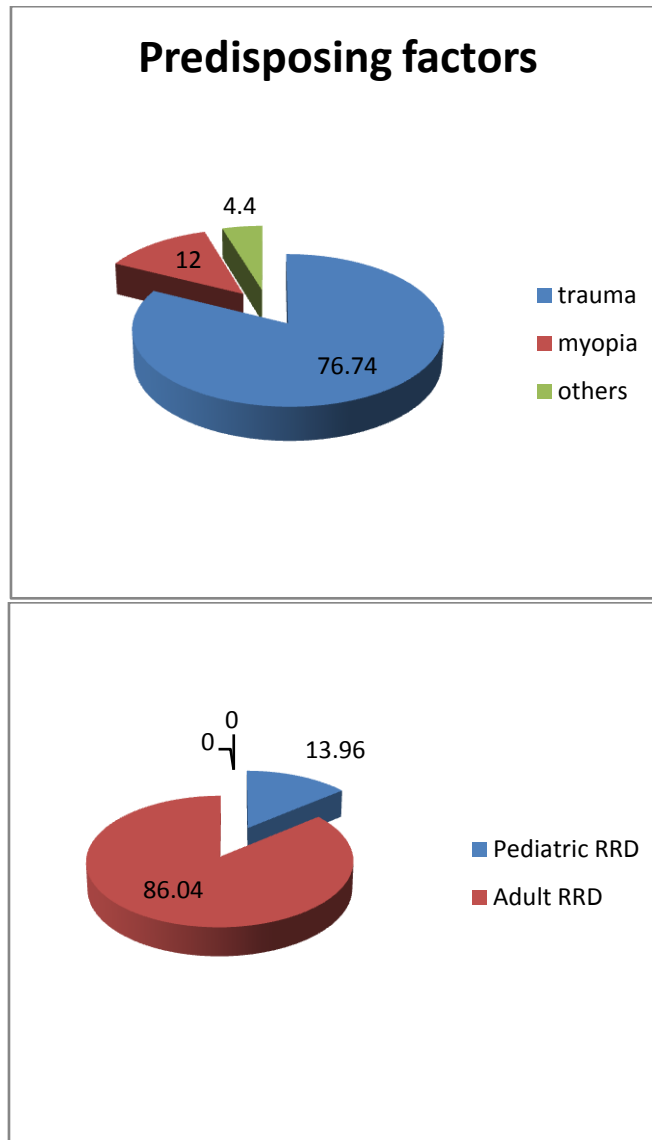
Choice of surgery was according to the time of presentation and complicating factors.

Patients with clear media, anterior and identifiable causative retinal break and those not having PVR were taken for Scleral Bucking. Buckling was done with 287 tyre+240 band in cases with multiple breaks that were widely located. Those with single break or closely located breaks confined to one clock hour, buckling was done with 505 sponge. Rest of the patients underwent PPV +/- encirclage. Pseudophakics were taken for vitrectomy.

In PPV, 240 band was tied before vitrectomy. Standard 23 G PPV with 3 scleral ports was done. PVD induction was done in all patients with vitreous cutter using suction mode. In phakics retinotomy was made nasally in those not having identifiable breaks and PfCl injected till anterior margin of retinotomy and SRF drained internally. 360 degree endolaser was done after air fluid exchange. In pseudophakic group PfCl was used invariably till anterior margin of break as media haze was there due to PCO, Scheling phenomenon was easily noted and most of the breaks were at base of vitreous. 360 degree endolaser was done under PfCl as with air media haze gets further aggravated. ILM peeling was done in cases with long standing RD, large break, macular hole.

Table no 1: Predisposing factors in pediatric age group

Predisposing factor	N	% of patients
Trauma	33	76.74
Myopia	12	27.90
Others	2	4.7



Out of total 308 patients of RRD 43 patients were of pediatric age group, i.e. 13.96%. Trauma was most common predisposing factor followed by myopia. One patient had RD in other eye (2.3%) and 12 patients (27.90%) had Lattice in other eye. Mean BCVA at day 90 was 0.5 log MAR. Anatomical attachment rate was 88.37% i.e. 37 patients achieved successful anatomical attachment. Those who failed to attach were- : 2 had PVR grade 3, 1 developed new break, 1 had re-detachment as break was at margin of indent, 1 required revision of buckling due to slowly increasing fluid at 3 months, 1 had coloboma RD.

V. Discussion:

These cases do differ from adult in following features

- Late presentation
- Do not co-operative in pre-operative examination
- Usually traumatic in which we can't quantify optic nerve damage
- Posterior hyaloid separation is tricky and if not removed leads to thick ERM formation
- Complications of GA are there
- Poor compliance for post op positioning for proper tamponade

The rationale for the choice of silicon oil as the internal tamponade includes the high incidence of trauma in these cases as well as the potential for poorer compliance with positioning. These cases have high incidence of developing post- operative PVR. Hence, meticulous removal of vitreous and posterior hyaloid is essential.

We included a total of 43 patients. In our series, the most common predisposing factor was trauma 76.74%, followed by high myopia 27.90%, congenital errors, FEVR. Cases with PVR, GRT, unlocatable break in clinical examination, posterior breaks were taken for 23 G PPV with encirclage with silicon oil tamponade. Rest of the cases underwent scleral buckling. Reattachment rate after first surgery was 88.37% and mean BCVA at day 90 was 0.5 Log MAR. **T K H Butler**⁵ study results had lower attachment rates (86.6%) and visual improvement in 53.3% and also support the view of trauma being the most common (40%) predisposing factor.

VI. Conclusion:

High reattachment rates and improvement in visual acuity in RRD in this age group can be achieved by PPV and encirclage with silicon oil tamponade or scleral buckling, depending upon presenting features. In pediatric age group, results are comparable to re-attachment rates in adult population if the appropriate surgical procedure is used. Those undergoing vitrectomy although had sub-optimal results. Trauma was the most common predisposing factor followed by myopia in this age group. Regular ophthalmoscopy of the sound eye is to be done for children at risk.

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